

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF DELAWARE**

IN THE MATTER OF INTEGRATED RESOURCE
PLANNING FOR THE PROVISION OF
STANDARD OFFER SERVICE BY
DELMARVA POWER & LIGHT COMPANY UNDER
26 DEL C. § 1007(c) & (d): REVIEW
AND APPROVAL OF THE REQUEST FOR
PROPOSALS FOR THE CONSTRUCTION OF
NEW GENERATION RESOURCES UNDER 26
DEL. C. § 1007(d)

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**ADDENDUM TO
INTERIM REPORT ON
DELMARVA POWER IRP IN
RELATION TO RFP**

PREPARED FOR:

**Delaware Public Service Commission
Delaware Office of Management and Budget
Delaware Energy Office
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Addendum To Interim Report on Delmarva Power IRP In Relation to RFP

This Addendum to the Independent Consultant's "Interim Report on Delmarva Power IRP in Relation to RFP" dated April 4, 2007 ("Interim Report") is submitted to address matters not included in the Interim Report due primarily to time limitations. The matters addressed in this Addendum include:

1. Results of additional analyses from Delmarva Power's consultant, ICF International (ICF) regarding a "Higher Gas" case and an "Additional Coal Retirements" case.
2. Impact of recent NYMEX natural gas prices on Conectiv's proposal.
3. Impact of the retirement of Indian River units 1 and 2 on the evaluation of NRG's proposal for a long-term power sale from its proposed coal-fired integrated gasification combined cycle (IGCC) project.
4. PJM's Reliability Pricing Model (RPM) and the bid evaluation.
5. Sensitivity analyses on price stability evaluation.

1. Results of Additional Requested Runs

Following the release of the April 4 Interim Report, the Commission Staff requested that Delmarva's consultant perform additional sensitivity runs that reflect higher gas prices than was tested previously by ICF under its "High Gas" scenario—30% higher than the reference case compared to 10-15% higher—along with other changed assumptions referenced in the Adjusted Load case.¹ In addition, the Commission Staff requested that a sensitivity analysis be conducted similar to the Additional Retirements case, except retirements of smaller coal generation units would be included, as had been previously requested by the IC.²

In the case of the higher, high gas price scenario, under no long-term contracts (market purchases only), SOS customer prices are estimated to increase 10.4% relative to the IC Adjusted Load case. With long-term unit contracts, price increases relative to the IC Adjusted Load case including Conectiv's bid is 9.5% (not including the impact of the one-time price adjustment, which will be discussed later), while price increases with

¹ See Interim Report at 30, 33-34.

² See Interim Report at 30-31.

NRG's and Bluewater's bids are 5.2% and 6.6%, respectively.³ However, SOS costs with the NRG and Bluewater proposals are still substantially above market under these assumptions.

With additional coal retirements assumed in the region, the impact on market prices and SOS costs with the various bids is similar to the higher high gas case, although to a lesser extent. The bids dampen volatility, but are still evaluated as being above market (although Conectiv's bid is close to the market).

Table 1: SOS Costs of Additional Requested Runs (2005\$/MWh)

	Market	NRG (25 yr)	BW (full 25 yr)	Conectiv
IC Adjusted Load	\$88.51	\$103.46	\$100.34	\$89.54
IC 30% Higher Gas	\$97.73	\$108.83	\$107.00	\$98.06
% Change	10.4%	5.2%	6.6%	9.5%
IC Additional Coal Retirements	\$90.80	\$104.78	\$102.07	\$91.65
% Change	2.6%	1.3%	1.7%	2.4%

2. Evaluation of Conectiv Bid—One-Time Price Adjustment

Since February when the initial bid evaluation was presented, the average 60-month NYMEX natural gas futures prices used in the evaluation of the one-time price adjustment to 1/3 of Conectiv's bid capacity prices and 100% of its on-peak base energy prices have increased approximately 11% (as of April 25, 2007). If the one-time adjustment were to occur based on these more recent NYMEX prices, the levelized 2005\$ SOS cost would increase by \$0.43/MWh compared to the bid evaluation. To reflect the potential SOS cost of the Conectiv's bid, it may be reasonable to incorporate at least a \$0.43/MWh adder in these sensitivity cases for Conectiv.

3. Impact of Removing Indian River 1 and 2 in NRG Bid Evaluation

In the Interim Report, we noted that ICF had inadvertently included Indian River Units 1 and 2 in the NRG runs, even though NRG has agreed to retire the two units if its proposed IGCC plant is built.⁴ ICF has re-run a test case for NRG to demonstrate that there is minimal impact on the resulting SOS cost. The resulting increase in SOS cost is negligible (levelized 2005\$) as demonstrated in Figure 1. However, the removal of Indian River 1&2 (approximately 160 MW) does have some impact on the overall capacity market price of \$1-\$2 per kW-year in 2005\$ for many of the years being

³ The results for Conectiv include a correction for a mathematic error made in the bid evaluation, which underestimated the \$/MWh SOS customer cost by \$.07/MWh. This is not material in our opinion.

⁴ Interim Report at 24, n 32.

evaluated. This demonstrates the sensitivity of capacity prices to retirements and builds in the Delmarva zone.

4. PJM's Reliability Pricing Model; Capacity Price Analysis

At the time the RFP and bid evaluation methodology were being formulated, PJM's Reliability Pricing Model (RPM) had not yet been adopted (the Federal Energy Regulatory Commission adopted RPM on the day bids were submitted). ICF's model takes into consideration the impact of additional capacity in the Delmarva zone on capacity market prices but does not utilize the RPM pricing methodology. There would be numerous difficulties in estimating the impact of RPM on capacity prices since the period covered by the bid evaluation starts after the three-year transition period under RPM will be completed and there are key components of RPM that have not been finalized yet. For instance, the question of which of the 23 potential Locational Delivery Areas (LDAs) will be determined to be constrained areas and thus be selected by PJM as LDAs in practice is still under study. However, based on our review of available information from PJM, we believe that the benefits in terms of lower capacity prices for Delmarva SOS ratepayers as a result of Delmarva entering into a long-term contract will likely be greater than estimated in the bid evaluation, although not of such a magnitude to alter the bid ranking or the substantial over-market costs of the NRG and Bluewater bids.

5. Sensitivity Analyses on Price Stability

As indicated in the Interim Report, we had requested that ICF perform some additional scenarios relative to some of the risk issues addressed in the report and the price stability assessment in the bid evaluation specifically.⁵ The purpose of these additional scenarios was to apply the price stability analysis to a set of assumptions that is more in line with those used in the "IC Case" that we used as our reference case in the price evaluation as well as those scenarios addressed in the Interim Report.⁶ These scenarios assume more moderate coal prices than those used by Delmarva in its reference case and in all but one of the sensitivities used in the price stability evaluation.

The additional sensitivity runs included tests as denoted in the table below relative to the IC Adjusted Load case (the IC Case, with changed assumptions on New Jersey load and onshore wind in Delaware). The resulting standard deviations used for scoring are described below. There are two "High Gas" cases. The first one, denoted by "High Gas" refers to the high gas price forecast used by ICF in the previous stability runs. The "30%

⁵ Interim Report at 2, n 4.

⁶ SOS costs for price stability testing may not be the same as reported in the Interim Report due to inclusion of migration calculations for this assessment (which is part of the price stability evaluation), while the previous report did not include migration assumptions.

High Gas” examines a potential fundamental shift in gas prices that results in prices 30% higher than the reference case. Next, the “Additional Retirements” case refers to retirements of oil/gas units less than 200 MW in PJM when they have reached a life of 60 years.⁷ The “Additional Coal Retirements” case includes the previous retirements and the retirements of additional coal units less than 200 MW that reach 60 years of life. Three other sensitivities were tested that resembled the previous sensitivity tests: Low Gas/Low CO2, Low Gas, and High Gas/High CO2.

Table 2: Revised IC Stability Comparison of Levelized SOS Costs (2005\$/MWh)

	Market	NRG (25 yr)	BW (full 25 yr)	Conectiv
IC Adjusted Load	\$88.74	\$103.17	\$100.29	\$89.62
High Gas	\$92.34	\$106.34	\$102.84	\$93.61
30% High Gas	\$97.32	\$106.70	\$107.78	\$97.91
Additional Retirements	\$89.38	\$104.04	\$100.97	\$90.73
Additional Coal Retirements	\$90.86	\$103.37	\$101.69	\$91.59
IC Low Gas/Low CO2	\$75.68	\$86.65	\$91.51	\$77.36
IC Low Gas	\$79.69	\$97.09	\$94.11	\$81.10
IC High Gas/High CO2	\$94.19	\$110.09	\$103.20	\$94.63
Standard Deviation	\$7.30	\$7.30	\$5.19	\$6.94
Revised Scores		0.0	20.0	3.4
Standard Deviation without High Gas/High CO2	\$7.49	\$7.09	\$5.46	\$7.16
Revised Scores without High Gas/High CO2		4.0	20.0	3.2

Using these cases, Bluewater’s bid is still the most stable relative to market and other bids. NRG’s bid becomes as stable as the market, but would still obtain a score of 0. Conectiv’s bid improves slightly and would obtain a somewhat higher score than in the bid evaluation. The reason for the slight improvement of the NRG and Conectiv bids is that the difference in coal price outcomes is less under these sets of assumptions. However, SOS costs with the NRG bid are still highly sensitive to market prices of CO2 allowance costs, which the Conectiv bid is as well but to a lesser extent. Even if we were to eliminate the high gas/high CO2 case from consideration, NRG and Conectiv would still receive a small number of points. Hence, these sensitivity analyses demonstrate that the results of the price stability evaluation are based on the characteristics of the bids that contribute to price stability on a long-term basis.

⁷ See Interim Report at 30-31.